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North Slope of Alaska ARM Facilities
Monthly Status Update
Sandia National Labs

December 2017

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1 North Slope Facilities Management Executive Summary and Major Issues

This monthly report is intended to communicate the status of North Slope ARM facilities managed by Sandia National Labs.

Operations Team

* Mark Ivey- ARM Alaska Sites Manager (SNL)
* Fred Helsel- Barrow and AMF3 Site Manager (SNL)
* Darielle Dexheimer- Tethered Balloon Operations (SNL)
* Valerie Sparks- ARM Project Office (SNL)
* Martin Stuefer- Rapid Response Team (UAF)
* Randy Peppler- ARM DQ Office Manager (OU)

2 Budget

FY2017 Financials (as of December 15, 2017)

	December	YTD
Carryover funds	$5,078,053	
Funds Allocated YTD	$1,500,000	
Carryover plus YTD funds	$6,578,053	
Cost, burdened amount	$1,534,586	
Uncosted Funds	$5,043,467	
Commits, burdened total	$2,304,141	
Current fiscal year uncommitted funds	$2,739,326	
Subsequent fiscal year (SFY)commits	$352,681	
Total uncommitted funds, including SFY commits	$2,299,747	
Fully Burdened Staff Costs	$201,000	
Fully Burdened Contract Costs	$203,000	
Fully Burdened Total Costs	$404,000	$1,535,000

3 Safety

AMF3- No incident/Injury

Barrow - No Incident/Injury

4 Instrument Status – Provided by Martin Stuefer

AMF3

INFORMAL AMF3 INSTRUMENT STATUS REPORT FOR December 24 - January 01, 2018

BRIEF STATUS OF INSTRUMENTS and site IN OLIKTOK AS OF 2018/01/01:

Facilities Operational
Data Systems Operational
Vehicles Operational
Desktop Computers Operational
SKYRAD - SKY Radiometer on Stand for downwelling Operational
MFRSR - Multifilter Rotating Shadowband Radiometer Not Operational
GNDRAD - Ground Radiometer on Stand for Upwelling Operational
MFR2.5m - Multifilter Radiometer at 2.5m height Not Operational
MAWS - Automatic Weather Station Operational
MET - Surface & Tower Meteorological Instruments Operational
CMH - Chilled Mirror Hygrometer Operational
AMC - Soil, up/downwelling radiation measurements Operational
ECOR - Eddy Correlation Flux System Operational
MWR3C - Three Channel Microwave Radiometer Operational
MPL - Micropulse Lidar Operational
DL - Doppler Lidar Operational
CEIL - Vaisala Ceilometer Operational
KAZR - Ka ARM Zenith Radar Operational as per `warno.arm.gov`
BBSS - Balloon Borne Sounding System Operational
TSI - Total Sky Imager Not Operational
AOS - Aerosol Observing System Partly Operational
AOSMET - AOS Meteorological Measurements Operational
CO - AOS Carbon Monoxide Analyzer Operational
CPC - Condensation Particle Counter Operational
CAPS - Cavity Attenuated Phase Shift Extinction Monitor Not Operational
ACSM - Aerosol Chemical Speciation Monitor Operational
HTD-MA - Humidified Tandem Differential Mobility Analyzer Not Operational
GHG - PICARRO Operational
NEPH - Nephelometer Operational
PSAP - Particle Soot Absorption Photometer Operational
UHSAS - Ultra-High Sensitivity Aerosol Spectrometer Operational
IMPACTOR - AOS Impactor Operational
OZONE - AOS Ozone Operational
CCN - Cloud Condensation Nuclei Particle Counter Not Operational
MASC - Multi Angle Snowflake Camera Operational
PIP - Precipitation Imaging Package Operational

LPM - Laser Precipitation Monitor Partly Operational
GEONOR - Geonor Weighing Gauge Operational
SRS - Snow Depth Sensor Operational
AERI - Atmospheric Emitted Radiance Interferometer Operational
CIMEL - Cimel Sunphotometer Not Operational
MET-AIR - DataHawk Unmanned Aerial System Operational
TBS - Tethered Balloon System Operational
IOP - MASC Not Operational
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* Oliktok Instruments in Detail: *
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INFRASTRUCTURE --- Facilities --- Operational.
INFRASTRUCTURE --- Data Systems --- Operational.
2018/01/01, CM-2018-AMF3-VSN-2271: HDD S/N NA7JSCJ1 was replaced with HDD S/N NA76MDAK.
Site ops will ship HDD S/N NA7JSCJ1 via USPS tracking # 9114 9014 9645 0852 3620 43.
2017/12/30, CM-2017-AMF3-VSN-2268: HDD S/N NA7Q2CSE was replaced with HDD S/N NA7JSCJ1.
Site ops will ship HDD S/N NA7Q2CSE via USPS tracking # 9114 9014 9645 0852 3620 43.
2017/12/29, CM-2017-AMF3-VSN-2267: HDD S/N NA75FF79 was replaced with HDD S/N NA7Q2CSE.
Site ops will ship HDD S/N NA75FF79 via USPS tracking # 9114 9014 9645 0852 3620 36.
2017/12/28, CM-2017-AMF3-VSN-2266: HDD S/N NA75FF7V was replaced with HDD S/N NA75FF79.
Site ops will ship HDD S/N NA75FF7V via USPS tracking # 9114 9014 9645 0852 3620 36.
2017/12/27, CM-2017-AMF3-VSN-2265: HDD S/N NA7Q2CPE was replaced with HDD S/N NA75FF7V.
Site ops will ship HDD S/N NA7Q2CPE via USPS tracking # 9114 9014 9645 0852 3620 29.
2017/12/26, CM-2017-AMF3-VSN-2264: HDD S/N NA77YRLO was replaced with HDD S/N NA7Q2CPE.
Site ops will ship HDD S/N NA77YRLO via USPS tracking # 9114 9014 9645 0852 3620 29.
2017/12/24, CM-2017-AMF3-VSN-2261: HDD S/N NA77YRDE was replaced with HDD S/N NA75FCZE.
Site ops will ship HDD S/N NA77YRDE via USPS tracking # 9114 9014 9645 0852 3620 12.
INFRASTRUCTURE --- Vehicles --- Operational.
INFRASTRUCTURE --- Desktop Computers --- Operational.
SKYRAD --- SKYRAD general --- Operational.
SKYRAD --- IRT --- Operational.
SKYRAD --- PIR 1 shaded --- Operational.
SKYRAD --- PIR 2 shaded --- Operational.
SKYRAD --- SOLAR Tracker --- Operational.
SKYRAD --- B&W diffuse --- Operational.
SKYRAD --- NIP --- Operational.
SKYRAD --- PSPg --- Operational.
SKYRAD --- MFRSR --- Not Operational. Removed for the Season, Currently Located at SGP for Calibration.
2017/11/11, DQPR-6657: MFRSR SN #199 was removed for winter calibration. It will be shipped to James Martin at SGP for calibration. FedEx tracking # 812187584198.
TIPTWR --- GNDRAD general --- Operational.
TIPTWR --- MFR2.5m --- Not Operational. Removed for the Season, Currently Located at SGP for Calibration.
TIPTWR --- PIRgnd --- Operational.
TIPTWR --- IRTgnd --- Operational.
TIPTWR --- PSPgnd --- Operational.
MAWS --- Automatic Weather Station --- Operational.
2017/12/08, DQPR-6661: Adam Theisen will run a comparison with the MET data to see when large differences arrived from the failed blower assembly. The blower assembly was replaced with a spare on 12/07.
2017/11/13, DQPR-6661: The aspirator motor on the T/RH probe failed. Replacements are being ordered. The most recent DQPR status is "waiting - for spares."
MET --- METTOWER general --- Operational.
MET --- CMH --- Operational.
MET --- Barometer --- Operational.
MET --- TEMPERATURE / HUMIDITY --- Operational.
MET --- WIND INSTRUMENTS (SONIC) --- Operational.
MET --- PWD --- Operational.
MET --- AMC --- Operational.
ECOR --- ECOR --- Operational.
ECOR --- SEBS --- Operational.

MW RADIOMETERS --- MWR3C --- Operational.
LIDAR --- MPL --- Operational.
LIDAR --- Doppler LIDAR --- Operational.
LIDAR --- CEIL --- Operational.
RADAR --- KAZR --- Operational as per warno.arm.gov.
2017/12/31, CM-2017-AMF3-VSN-2269: The KAZR radome was found covered with snow accumulation around 17 UTC on 2017/12/31. The technician cleared the snow from the radome cover.
Sonde --- BBSS --- Operational.
2018/01/01, CM-2018-AMF3-VSN-2272: Site ops was unable to launch the morning balloon due to high winds, which are sustained at 30mph / 13.1m/s. Launches will resume when conditions permit.
2017/12/31, CM-2017-AMF3-VSN-2270: Site ops was unable to launch the afternoon balloon due to technical difficulties.
IMG --- TSI --- Not Operational.
2017/11/04, DQPR-6625/ CM-2017-AMF3-VSN-2181: Season removal of the TSI'S/N 109, Model # TSI-660, WD80426, ENG0003607. The software was stopped, power and heater switch turned off. Power, data, and ground wires were removed. The base plate hardware and unit were removed, the exterior wires were sealed in a plastic bag, the instrument was stored in its case, and placed in warm storage for the winter. The most recent DQPR status is "waiting - for spares."
AOS --- General --- Partly Operational, Some Instruments Shut Down for Winter.
2017/07/28, DQPR-5858: Unless there are objections from Cindy or the PRB, Joshua King proposes that we abandon this DQPR. The most recent DQPR status is "in progress - assignments."
2017/06/23, DQPR-5858: Richard Wagener asked if anyone has looked at the VM's clock. Could it be that the time lags behind, and then jumps (resyncs), creating gaps in the time record? Richard suggests adding an assignment to Brent to look into possible system level causes for this behavior. The most recent DQPR status is "in progress - assignments."
AOS --- AOSMET --- Operational.
AOS --- CO - Analyzer --- Operational.
AOS --- CPC --- Operational.
AOS --- CAPS --- Not Operational, Instrument at BNL Due to Incorrect Data.
2017/11/22, DQPR-6680: Since 2017/08/29 at 22:07 UTC, the 1-um switch on the Impactor is not working when the Impactor goes to the 1 um position. So the 'read' signal is reporting 3 (indeterminate) in this position. We have verified that the Impactor is working correctly. The mentor was contacted and will work with Operations to fix the signal. This affects processing for PSAP, CAPS and Nephelometer. Mentor (Uin) should close this DQPR once fixed.
2017/08/07, DQPR-5816: The red channel should be usable once the mentor can look at the entire OLI dataset. Related to this issue, the mentor has been informed by the manufacturer that a fix to the ongoing problem with the 3W unit regarding the need for a PSL calibration is being finalized. This fix will require swapping out the 3 DAQ cards. New cards are currently being created by a third party for the manufacturer (Aerodyne). Given this, the OLI CAPS will remain at BNL until the three new cards can be installed. The most recent DQPR status is "in progress - assignments."
2017/07/27, DQPR-5816: From the raw data record, it looks like the CAPS was back in service on 2017/06/26. Joshua King asked Ken Burk if the ingests can be turned back on. Arthur Sedlacek has an assignment to write a DQR. The most recent DQPR status is "in progress - assignments."
2017/05/08, DQPR-5816: The OLI CAPS is at BNL, where one of the sample pumps was replaced, the 3- DAQ cards were mounted with screws, and optics were cleaned. The system is currently undergoing a performance test, and as part of this check, some irregularities (signal fluctuations) were observed. The mentor is in contact with the manufacturer. Once the signal fluctuations are resolved, a PSL calibration will be performed prior to shipment back to OLI. This PSL calibration is necessary due to a firmware issue. While Aerodyne is testing a new card that corrects the issue, it is not yet ready for prime time. The most recent DQPR status is "in progress - assignments."
AOS --- ACSM --- Operational.
AOS --- GHG-Picarro --- Operational.
AOS --- HT-DMA --- Not Operational. Shut Down for Winter.
AOS --- UHSAS --- Operational.
2017/12/01, DQPR-6618: Adam Theisen asked Cindy/Janek if a secondary period (10/12-10/15) exists, or if this DQPR can this be closed out. The most recent DQPR status is "open - requires action."
2017/11/16, DQPR-6618: The DMF is waiting to receive data from Cindy/Janek for the secondary 10/12 - 10/15 period if they exist on the instrument. The most recent DQPR status is "open - requires action."
2017/10/31, DQPR-6618: There was data missing from 2017/10/06 at 17:00 UTC to 2017/10/08 at 20:07 UTC. The missing files were processed and collected. Joshua King added that he is now not seeing data from the 2017/10/12 - 10/15 period. The most recent DQPR status is "open - requires action."

AOS --- NEPH --- Operational.
2017/12/01, DQPR-6681: Janek Uin has an assignment to write DQR D171201.4 on the Impactor datastreams. This DQR would be for documenting the problem despite good data quality. The most recent DQPR status is "in progress - assignments."

2017/11/22, DQPR-6681: Since 2017/08/29 at 22:07 UTC, the 1-um switch on the Impactor is not working when the Impactor goes to the 1 um position. So the 'read' signal is reporting 3 (indeterminate) in this position. We have verified that the Impactor is working correctly. The mentor was contacted and will work with Operations to fix the signal. This affects processing for PSAP, CAPS and Nephelometer. The mentor (Uin) should close this DQPR once fixed. Janek commented that the limit switch was misaligned, and this was fixed. This issue affected only the impactor position reading, and the impactor was switching properly. He is not sure if the limit switch readings are ingested, and asks what the best course of action is for filing a DQR. The most recent DQPR status is "open - requires action."
AOS --- IMPACTOR --- Operational.
AOS --- Ozone --- Operational.
2017/12/25, DQPR-6748: Data is not available beginning 22:00 UTC on 12/22. DSView indicates an ingest issue. The most recent DQPR status is "open - requires action."
AOS --- PSAP --- Operational. Pentras was Shut Down for the Winter.
2017/11/22, DQPR-6682: Since 2017/08/29 at 22:07 UTC, the 1-um switch on the Impactor is not working when the Impactor goes to the 1 um position. So the 'read' signal is reporting 3 (indeterminate) in this position. We have verified that the Impactor is working correctly. The mentor was contacted and will work with Operations to fix the signal. This affects processing for PSAP, CAPS and Nephelometer. The mentor (Uin) should close this DQPR once fixed. The most recent DQPR status is "open - requires action."
AOS --- UHSAS --- Operational.
AOS --- IMPACTOR --- Operational.
AOS --- CCN --- Not Operational.
Precip --- MASC --- Operational.
Precip --- PIP --- Operational.
Precip --- LPM --- Partly Operational. No Ingest.
Precip --- GEONOR --- Operational.
Precip --- SRS --- Operational, but Some Noise Issues.
2017/12/20, DQPR-6717: James Tonkin ran the ingests and opened a data review on SRS for both OLI.M1 and NSA.C1. They have been assigned to Adam. The NSA data review is EWO0021847, and the OLI data review is EWO0021848. The most recent DQPR status is "open - requires action."
2017/12/15, DQPR-6717: Once we have the exact periods of data outage, a DQR will be submitted to flag the data and inform end users. Adam Theisen added that it looks like ingests are not running for the SRS data. He asked Rob to look into this.
2017/12/12, DQPR-6717: Since 2017/11/22, there have been intermittent periods of noisy measurements/data dropouts. The 3 sensors do not exhibit the issue at the same time; instead, the sensors have sporadic problems. Jennifer Delamere plans to work with the OLI site operators to do some experiments to see if they can isolate the source of the problem.
Other --- AERI --- Operational.
Other --- CIMEL --- Not Operational.
Other --- DataHawk Unmanned Aerial System --- Operational, not a full time instrument.
Other --- TBS --- Operational.
IOP --- MASC --- Not Operational. Cameras Will Not Connect to Software.

Barrow

INFORMAL NSA INSTRUMENT STATUS REPORT FOR December 24, 2017 - January 01, 2018
BRIEF STATUS OF INSTRUMENTS IN BARROW (C1) AS OF 2018/01/01:
Facilities Operational
Data Systems Operational
Vehicles Partly Operational
Desktop Computers Operational
SKYRAD - SKY Radiometer on Stand for Downwelling Operational
MFRSR - Multifilter Rotating Shadowband Radiometer Not Operational
NIMFR - Normal Incidence Multifilter Radiometer Not Operational
GNDRAD - Ground Radiometer on Stand for Upwelling Operational
MFR10m - Multifilter Radiometer at 10m height Not Operational
MET - Surface & Tower Meteorological Instruments Operational
AMC - Soil, up/downwelling radiation measurements Operational
ECOR-twr - Eddy Correlation Flux System Operational
MWR - Microwave Radiometer Operational

MWRP - Microwave Radiometer Profiler Operational
MWRHF - Microwave Radiometer High Frequency Operational
GVR - G-band Vapor Radiometer Operational
GVRP - G-band Vapor Radiometer Profiler Not Operational
HSRL - High Spectral Resolution Lidar Operational
MPL - Micropulse Lidar Operational
CEIL - Vaisala Ceilometer Operational
DL - Doppler LIDAR Operational
KAZR - Ka ARM Zenith Radar Operational as per warno.arm.gov
KaWSACR - Ka-Band Scanning ARM Cloud Radar Not Operational as per warno.arm.gov
XSAPR - X-Band Scanning ARM Precipitation Radar Not Operational as per warno.arm.gov
BBSS (Autosonde) - Balloon Borne Sounding System Operational
AOS - Aerosol Observing System Operational
CLAP - Continuous Light Absorption Photometer Operational
CPC - Condensation Particle Counter Operational
NEPH - Nephelometer Operational
IMPACTOR - AOS Impactor Operational
TSI - Total Sky Imager Not Operational
TOWERCAM - 40m tower camera Operational
Great White Camera Operational
LPM - Laser Precipitation Monitor Partly Operational
SRS - Snow Depth Sensor Operational
AERI - Atmospheric Emitted Radiance Interferometer Operational
CIMEL - Cimel Sunphotometer Not Operational

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* Barrow Instruments in Detail: *
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INFRASTRUCTURE --- Facilities --- Operational.
2017/12/28, CM-2017-NSA-VSN-4496: Walter Brower reported a high temperature alarm, so Josh Ivanoff checked inside the enclosure to see that the temperature was at 86F. The air handler was running normally, but he found that the air intake was plugged with ice and snow. The enclosure is now cooling off, and was 77F at last check.
INFRASTRUCTURE --- Data Systems --- Operational.
INFRASTRUCTURE --- Vehicles --- Partly Operational. Telehandler is Down.
INFRASTRUCTURE --- Desktop Computers --- Operational.
SKYRAD --- SKYRAD General --- Operational.
SKYRAD --- IRT --- Operational.
SKYRAD --- PIR 1 Shaded --- Operational.
SKYRAD --- PIR 2 Shaded --- Operational.
SKYRAD --- SOLAR Tracker --- Operational.
SKYRAD --- B&W diffuse --- Operational.
SKYRAD --- NIP --- Operational.
SKYRAD --- PSPg --- Operational.
SKYRAD --- MFRSR --- Not operational. Removed for the Season.
2017/12/01, DQPR-6694: On 2017/11/17 at 18:02 UTC the instrument was removed for the winter and data unavailability begins. The most recent DQPR status is "waiting - for spares."
SKYRAD --- NIMFR --- Not Operational. Removed for the Season.
2017/12/11, DQPR-6709: The instrument was taken down for the winter on 2017/11/17 at 18:02 UTC. The most recent DQPR status is "waiting - for spares."
TIPTWR --- GNDRAD general --- Operational.
TIPTWR --- MFR10m --- Not Operational.
2017/12/23, DQPR-6747: The MFR10m was taken down at approximately 20:00 UTC for the winter. The most recent DQPR status is "open - requires action."
TIPTWR --- PIRgnd --- Operational.
TIPTWR --- IRTgnd --- Operational.
TIPTWR --- PSPgnd --- Operational.
MET --- METTOWER general --- Operational.
MET --- CMH --- Operational.
MET --- Barometer --- Operational.

MET --- TEMPERATURE / HUMIDITY --- Operational.
MET --- WIND INSTRUMENTS (SONIC) --- Operational.
MET --- PWD --- Operational.
MET --- AMC --- Operational.
2017/10/20, DQPR-6589: A lack of sufficient factory calibrations is causing missing and flatlined values in the volumetric water content fields since 2017/06/18. An example plot is posted on the DQPR. The most recent DQPR status is "open - requires action."
2016/10/10, DQPR-5694: Joshua King adds that vmc from sensor 4 was missing from 14:30 UTC 2016/07/12- 15:30 UTC 2016/09/25. Since returning 2016/09/25, vmc has been decreasing to below 0.3. He is asking mentors if they have thoughts on what is causing this behavior. An attached image can be found on the DQPR page. IM Ken Reichl responds that this is an issue outlined in DQPR-4793 for the analogous site, OLI. The instrument reports soil data as 9999999, or a non-numerical character (for data SGP) for soil systems. The AMC systems may report missing data during warm seasons for instruments that are not sufficiently calibrated. The OLI datastream has an open-ended DQR D151023.3. Ken asks if he should make one for the NSA data as well, and is the DQR system the best way to characterize this issue?
ECOR --- ECOR-twr --- Operational. Licor 7700 Removed for Winter.
MW RADIOMETERS --- MWR --- Operational.
MW RADIOMETERS --- MWRP --- Operational.
MW RADIOMETERS --- MWRHF --- Operational, but Still Excessive Noise Conditions.
2017/12/19, DQPR-6737: A software issue prevented the MWRHF instrument from collecting data from 12/11/17 at 4:00 UTC to 12/15/17 at ~ 14:30 UTC. The software was running during this time, but data was not being collected, and the display was not being populated. Tim Grove resolved the software issue on 12/15, and restarted the software. The most recent DQPR status is "open - requires action."
2016/09/30, DQPR-4165: The 150 GHz channel was showing high noise levels probably because of an external source of interference. Adam inquires if there is a path forward to solve the interference issues? The current DQPR status is "in progress-assignments", and it is open-ended. DQRs D140610.1 and D160426.3 have been reviewed and accepted by the PRB.
MW RADIOMETERS --- GVR --- Operational.
MW RADIOMETERS --- GVRP --- Not Operational. Work is Being Done on the Software.
2017/12/24, CM-2017-NSA-VSN-4495: The computer was not responding, so it was rebooted at 20:50 UTC.
2017/12/15, DQPR-6647: Maria Cadeddu sent an email to Radiometrics yesterday to check on the status of the software work. The most recent DQPR status is "open - requires action."
2017/11/18, DQPR-6647: Radiometrics has requested to remotely access the computer. Once they get authorization they will check why we can't load the interface. The most recent DQPR status is "open - requires action."
2017/11/09, DQPR-6647: All variables were not available intermittently starting 2017/10/29, followed by consistent data loss on 2017/11/04. Tim Grove was working on ARM coring the computer on November 1st - 2nd. However, the primary issue was the software crashing. Something must have gotten corrupted last week. Maria is working with Radiometrics now to figure out how to keep the software running properly and to trigger auto restarts. The ''vizmet'' interface should always run in the background on the computer and will take care of daily starts. Once the program starts operating regularly, the end date will need to be updated. The most recent DQPR status is "open - requires action."
LIDAR --- HSRL --- Operational.
LIDAR --- MPL --- Operational. Instrument Polarization Off.
2017/11/22, DQPR-6590: Paytsar Muradyan submitted DQR D171103.8 on missing data. The most recent DQPR status is "in progress - assignments."
2017/10/03, DQPR-6328: Donna Flynn posted some responses to Rich's analysis of data quality. Adam posted a figure of 'Afterpulse Comparison Polarization failing/working for ENA MPL.'
2017/09/29, DQPR-6328: Donna Flynn submitted a summary of her findings of the MPL system at NSA. Richard Coulter added that afterwards that it is not likely that applying the after pulse correction created negative backscatter, but it is more likely the background value that is causing any negative values. The SNR is a highly variable variable, affected by multiple elements, and is and not likely to be useful for system evaluation. The afterpulse measurement process is well established and works well when done properly. More discussion is needed, and the details can be found on the DQPR page. The most recent DQPR status is "waiting - for spares."
2017/09/13, DQPR-6328: There are no spare MPLs right now. We are planning on sending the NSA MPL for repairs once we have a replacement (probably next month). So Paytsar's suggestion at this point is to wait until the replacement gets to NSA, then we will be able to properly identify the affected periods. The most recent DQPR status is "waiting - for spares."
2017/08/02, DQPR-6328: DQR D170802.9 has been submitted for AWR.M1. When start and end dates for NSA.C1 problems are identified, this DQR can be used as a template. The most recent DQPR status is "open - requires action."
2017/07/07, DQPR-6328: During the investigation into the MPLCMASK problem, it was determined that there are potential problems with the NSA C1 and AWR M1 polarizations. From Donna Flynn: The AWR.M1 instrument polarization is off. The values for the linear depolarization ratio are too high. If you compare the water clouds at both AWR.S1 (reasonable values) and AWR.M1(high) on 20151210, this is evident. Additionally, the NSA.C1 data looks suspicious. I have only looked at a few days, but I

have found poor agreement with HSRL and clear sky profiles when compared to Rayleigh, which suggests either an overly strong afterpulse or a collimation problem. The most recent DQPR status is "open - requires action."
LIDAR --- CEIL --- Operational.
LIDAR --- Doppler LIDAR --- Operational.
RADAR --- KAZR --- Operational as per warno.arm.gov.
2017/06/12, warno.arm.gov: The RDS1 power supply was replaced and the signal processor is operational. The system will be taken out for maintenance for a short time to replace a fan.
RADAR --- KaWSACR --- Not Operational as per warno.arm.gov.
2017/11/13, DQPR-4041: Adam asked Nitin or Karen for information on the start/end times of this issue so that this DQPR can be closed. The most recent DQPR status is "waiting - for spares."
2016/03/12, DQPR-4041: After much coordination with the pedestal manufacturer and while working with the instrument mentors, the azimuth DSA was re-programmed. Once a reprogrammed Azimuth DSA was installed and verified the Elevation DSA was also found to be faulty. It was replaced with another unit and the system now accepts azimuth and elevation commands. The most recent DQPR status is "waiting- for spares."
RADAR --- XSAPR --- Not Operational as per warno.arm.gov .
2016/08/04, DQPR-4841: The elevation servo amplifier failed, the radar can not scan in elevation. The radar will be upgraded sometime, and will be turned off until then. A DQR was submitted and reviewed by PRB. The DQPR status is "in progress" due to it being open-ended. Adam Theisen's DQR D160719.1 has been reviewed and accepted by the PRB.
Sonde --- BBSS (Autosonde) --- Operational.
2017/12/20, DQPR-6627: Michael Giansiracusa asked why the nsasondewnpnS01.b1.20171031.174100.cdf needs to be deleted. Adam clarified that the C1 launch was done with the S01 system due to a communications issue. This gave it the S01 facility name, which was reprocessed to have the C1 facility in the name. These data are currently stored as C1, which makes this S01 file a duplicate. The S01 is also normally reserved for special launches. Michael then deleted the 'nsasondewnpnS01.b1.20171031.174100.cdf' file. The most recent DQPR status is "open - requires action."
2017/11/27, DQPR-6627: Donna responded that she is not sure how this was done in the past, but recommended that the b1 level S01 file be deleted since it has been renamed. The most recent DQPR status is "open - requires action."
2017/11/17, DQPR-6627: Adam asked Donna/Ken if the b1 level S01 file (nsasondewnpnS01.b1.20171031.174100.cdf) can be deleted now that it's been renamed.
2017/11/10, DQPR-6627: There were communications issues with Autosonde NSA C1 that required the scheduled launch to be performed using NSA S01. Could this file be renamed from S01 to C1 so that it shows up with the regular launch data? Launch date/time: 10/31/2017 at 1741 GMT. Only this one launch was affected.
AOS --- General --- Operational.
AOS --- AETH --- Operational.
AOS --- CLAP --- Operational.
AOS --- CPC --- Operational.
AOS --- NEPH --- Operational.
AOS --- IMPACTOR --- Operational.
IMG --- TSI --- Not Operational.
2017/12/22, DQPR-6743/6744: The TSI has not been operational for the winter since 2017/11/07. The most recent DQPR status is "open - requires action."
IMG --- TOWERCAM --- Operational.
IMG --- Great White Camera --- Operational.
Precip --- LPM --- Partly Operational. No Ingest.
Precip --- SRS --- Partly Operational. No Ingest.
Other --- AERI --- Operational.
Other --- CIMEL --- Not Operational.

5 North Slope Facilities

AMF3

Current and Upcoming Site Visits

Al Bendure, Bruce Edwardson-SNL	12/11-22/2017	turbine power shelter upgrades

Current and Upcoming IOPs

De-Icing Comparison Experiment (DICE)
AXIS camera was relocated for Chuck Longs De-Icing Comparison Experiment (DICE).
This will enable Chuck to observe the AMF3 radiometers. Martin Stuefer setup a script to take a photo every 10 minutes they can be viewed at:
http://nanuna.gi.alaska.edu/media/cam/oli_psp/
http://nanuna.gi.alaska.edu/media/cam/oli_skyrad/

Snowflake Settling Speed Experiment: MASC (upcoming) Timothy Garrett- University of Utah

Evaluate NASA PIP Instrument at Oliktok - ENG0003203

Site and Safety Issues

Presently, snow clearing for the site, provided by the Air Force contractor (ARCTEC), has been good.

The winter winds and snowfall have been above average this year. The oil fields have had Phase II and III conditions for the weeks of 12/11 and 12/18. Phase II conditions limit travel to two or move vehicles convoying together. Phase III conditions only allow travel for medical emergencies, and requires escort by heavy equipment.

Unmet Needs

We are running on leased diesel generators while other options are explored.

Site News

During Al Bendure and Bruce Edwardson's early December, the microturbines were re-installed in shelters at Oliktok and first phase of testing was completed. We plan to review the power system design and review the system configuration options before switching from standard diesel generators to microturbines.

New fuel and return lines were ran from the new 5000-gallon fuel tank to the turbine day tanks. Modifications of fuel system shelters are underway, which Include new stainless steel fuel lines, filters, and valves, from the day tanks to turbines.

New 5000-gallon fuel tank and turbine shelters.

MFRSR, MFR, TSI, and Cimel, have been removed for the winter. The instruments requiring calibration were sent out. The instruments will be reinstalled in Spring 2018, when the sun is above the horizon.

Site Staffing

N/A

Tethered Balloon Operations

During the month of December, work continued on upgrading the TBS winch trailer. A new electronics box was installed that houses all of the controls, chargers, batteries, switches and displays. The box was outfitted with a layer of insulation and a heater to help prevent degraded power supply from the batteries during cold temperatures. In addition, the winch was configured on the trailer to mark the location where two new support crossmembers will be installed. The new winch level wind guide was finalized. It will be manufactured, installed and tested over the next few months.

The TBS Instrument Handbook was finalized and submitted to ARM. Visualizations of DTS data were created for a presentation at the AMS 2018 meeting in January.

Figure 1: Battery and control box and winch on trailer

Figure 2: Battery chargers install in battery box

Figure 3: Final battery and control installation in box

Barrow

Current and Upcoming Site Visits

N/A

Current and Upcoming IOPs

De-Icing Comparison Experiment (DICE)
AXIS camera was relocated for Chuck Longs De-Icing Comparison Experiment (DICE).
This will enable Chuck to observe the AMF3 radiometers. Martin Stuefer setup a script to take a photo every 10 minutes they can be viewed at:
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http://nanuna.gi.alaska.edu/media/cam/oli_skyrad/

SNPP/NPOESS Ground Truth Sonde Launch, Phase 5 – Started Oct 1, 2016

Seismic Probes for NSF– POP Ends, Oct 31, 2018

OYES-Electric Field Study, Texas A&M, Started June 2017

Global Navigation Satellite System (GNSS) – Started July 2017

Site and Safety Issues

Red Ranger is in the shop for engine replacement.

Recently, there have been times the site has been inaccessible, except by tracked vehicles, due to poor snow clearing by ARCTEC. The employee in charge of clearing snow, has been piling it up against the DEWLine Station, rather than pushing it out, causing drifting on the access road to the site.

Unmet Needs

We are currently waiting for the tundra to freeze to move an insulated connex close to the auto launcher for manual balloon launches.

Site News

MFRSR, MFR, TSI, and Cimel, have been removed for the winter. The instruments requiring calibration were sent out. The instruments will be reinstalled in Spring 2018, when the sun is above the horizon.

Site Staffing

Dan Lucero, Barrow site manager, announced his upcoming retirement, his last day in the office will be December 22.

Distribution

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